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## SUBACUTE RECURRENT MULTIPLE NEURITIS.<sup>1</sup>

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GENTLEMEN: I wish to call your attention to-day to this case, on account of the interest that it presents:

J. G., age 27, a butcher, for a number of years, but the last two or three years he has been a bartender. He came to Colorado nine years ago. Mother died of consumption; father healthy. There are no nervous diseases in the family, and he himself was well until his eighth year, when he began to suffer with slight attacks of shortness of breath, for which he came to Colorado ten years ago. He denies syphilis and gonorrhœa, although he has been exposed a number of times. He began beer-drinking when twelve years old. He says he did not drink to excess for a few years. He thinks for eight or ten years he has been in the habit of taking several drinks of beer, sometimes whiskey, daily. Three years ago he suffered from weakness of the muscles of the legs below the knees and had some pain and loss of feeling in feet and hands. He does not remember whether his hands were weak or not. He says the pain was not sharp, but simply a dull, sore feeling. He was confined to his bed about three weeks. After this he was able to walk, with the aid of canes, for three weeks; but it was three months after leaving his bed before he was able to return to his work. During the stage of convalescence, weakness of the legs and inability to stand firmly, bothered him most. Sometimes while walking alone he would fall, because his legs seemed unable to support him.

After this sickness he thinks he enjoyed fairly good health until about the middle of June of the present year, when he again experienced pain in the feet and legs, attended with weakness in the muscles of the legs below the knees. The hands and arms, he thinks, were weak, but not the seat of pain. He seems not to have been totally disabled at this time, and a week later, when a spectator at

<sup>1</sup> A clinical lecture delivered at the Arapahoe County Hospital, Oct. 3, 1891.



athletic sports, he lay down in the open air and went to sleep, and after an hour or two, on awaking, he found himself thoroughly drenched with rain. This occurred about 4 P.M., and the evening of the same day he began to suffer with soreness in the muscles of the legs below the knees. Parts affected were below the knees almost entirely, although he had some slight numb sensations in the hands. Four or five weeks after this, he was able to walk without the assistance of canes or crutches. During this time there was pain and soreness in the calves of the legs, attended with great weakness of the muscles below the knees. The forearms and hands were weak, but not the seat of much pain.

After this attack he enjoyed fairly good health until two weeks ago, when, after over-exertion, causing him to perspire freely, he drank an immoderate quantity of cold beer. The next morning he felt weak and depressed, and by noon was quite ill. He suffered with sore feelings and numb sensations in the legs below the knees, and slight weakness and sore feelings in the muscles of the forearms. During the next week he felt decided numbness in the calves of the legs and a slight numb sensation with sore feelings in the hands and forearms. The perverted sensations and loss of motion was about the same on both sides. He did not experience a great deal of pain except on trying to walk, when the pain was decided in the calves of the legs. He was able to walk with the assistance of a cane when admitted to the hospital on Sept. 20, 1891, about one week after the appearance of the symptoms just described. On admission he complained of rheumatism in his legs, and was placed under the care of the general physician without an examination, patient's diagnosis of rheumatism having been accepted.

My attention was called to him one week later, on September 27th, when it was found he was unable to walk. He at that time was feeling quite nervous but experienced little or no pain except on moving the legs when the calf muscles were sore. The examination at that time revealed the following conditions: The hip muscles move the thigh quite freely, and the thigh muscles are fairly strong, but the muscles below the knees are weak, with total paralysis of the anterior tibial muscles on each side, allowing a typical condition of foot-drop. Posterior tibial muscles retain some strength, but are weak and sensitive to pressure. There is complete wrist-drop when the fingers are extended, but he is able to slightly extend the hand on the wrist when

strength, and shoulder movements quite strong. There is decided wasting of the muscles below the knees and elbows, the fingers are flexed. The elbow movements are fair, but apparently none above. Knee-jerks are completely absent. No ankle clonus, but stroking the soles of the feet causes slight movement of the leg muscles, a condition of slight plantar hyperesthesia. Cremasteric reflexes slight. Reflexes of trunk normal. No reflexes could be obtained around the wrist. Deep reflexes of both arms greatly exaggerated, but to an equal extent on both sides. He complains of numb sensations in the hands. Sense of touch as decided by the aesthesiometer, seemed to be perfectly maintained in hands and arms. Tactile sense was perverted in some portions of the feet and legs. Contact could be appreciated on nearly all parts of the feet, but the sense was delayed, and two points of the instrument were recognized as such only at abnormal distances. The lessened sensibility is more marked in the distal portions of the toes. On the inner side of each ankle and calf of the leg there are areas of complete anaesthesia. Temperature sense slightly blurred, but nearly normal except on posterior and inner tibial region, where cool substances are felt as intensely cold, and warm substances, at times, are not felt at all, or are spoken of as cold or warm indifferently. In some spots cold substances give rise to no sensation at all. Pressure and muscular senses normal. The trunk and upper portions of the limbs are unaffected. He was placed in bed, with his body carefully protected from exposure and draft, and was given daily warm baths. The temperature of the water was about  $100^{\circ}$ , and he has been allowed to remain in the bath from twenty to thirty minutes. The distal portions of the limbs have been kept wrapped in flannels, and he has been given, internally, strychnine. There have been no complications. To-day he states that he is better; but we will examine him again and compare his condition with that found one week ago. You will observe that he is totally unable to bear his weight on his legs. There is complete foot-drop. Movements of the feet give him considerable pain, especially in the calves of the legs. The knee-jerks are conspicuous by their absence. Nearly every test to-day shows about the same symptoms elicited a week ago, with the exception that the muscular atrophy is greater; the areas of anaesthesia on the legs and feet have increased; that there is greater muscular weakness in the legs below the knees; that paralysis is becoming more complete below the elbows, and that pain to a slight extent is felt in fore-

arms. Plantar and palmar hyperesthesia is but slight. Bowels and bladder in our patient have been unaffected throughout. The kidneys, liver lungs, and heart are uninvol ved.

Let us now endeavor to analyze the symptoms presented by this case, and see if we can by a process of exclusion arrive at a satisfactory diagnosis. In the first place, the bilateral symptoms and the peculiar distribution of the paralysis and the disturbances in sensation would enable us at once to exclude brain lesions from taking any part in the production of the symptoms. There is a lesion of the spinal cord known as poliomyelitis anterior acuta, commonly known as infantile paralysis, that presents many symptoms similar to the case we are investigating. In it there is paralysis, most marked as a rule at the distal portions of the extremities, but even here one or more fingers of a hand may partially escape. It may come on gradually or suddenly, and is frequently attended by slight rheumatoid pain, especially in the joints at the beginning of the disease; but this disease when uncomplicated by inflammation of the spinal nerves is never attended with any sensory disturbances, especially such as we find here on the calves of the legs and inner sides of the ankles. Besides, in infantile paralysis the muscular affection is rarely symmetrical, one group of muscles in one leg being most affected and an entirely different group in the other leg, presenting a curious kind of paralysis. The deltoid muscles frequently present great weakness, with rapid wasting in cases whose forearm muscles may not be paralyzed. It is rare, also, in infantile paralysis to have a typical wrist- and foot-drop, unless the flexors are also paralyzed. We can then, I think, exclude this form of spinal trouble.

Spinal pachymeningitis is attended by paralysis and sensory disturbances, but in these the symptoms are not limited to the distal portions of the extremities, and the legs and arms are not affected alike. If the disease attacks the membranes in the dorsal region or at the lower portion of the cord, the arms entirely escape, whereas the trunk muscles and legs are involved. If the affection is sufficient to

involve the arms, the brachial and cervical plexuses are the seat of the pain, the legs presenting no symptoms until the cord is pressed upon, when they become weak or paralyzed; but even then they are not the seat of pain as a rule. I think we are able to exclude this disease.

There is some danger of confounding acute ascending paralysis with the disease before us, but a knowledge of the principal symptoms and their mode of onset characterizing this curious spinal affection is sufficient to remove all difficulty in the diagnosis. There are little or no sensory disturbances. The paralysis begins in the feet and lower portions of the legs and gradually extends upward, the thigh muscles being affected before the trunk, and the trunk before the arms. These symptoms are totally different from what we have before us, and this disease can also be excluded.

Posterior spinal sclerosis, especially in its more irregular form, might be taken for the disease from which this man is suffering. More especially so in this case, as our patient has presented symptoms from time to time, extending over a period of three years. Ataxia is a prominent symptom in this disease as well as in the patient before us, but posterior spinal sclerosis is unattended with foot- and wrist-drop, marked muscular wasting or reactions of degeneration found in our patient. This form of spinal trouble can then, be excluded in the diagnosis, and in reality it is only when it is complicated with involvement of the spinal nerves that much difficulty in the diagnosis is encountered. Our patient was admitted for rheumatism, and treated for several days for this before paralysis was observed, when he was turned over to me to determine the character of the paralysis. It only needs careful examination in these cases to distinguish them from acute rheumatism. The paralysis, especially foot- and wrist-drop, sensory disturbances, especially pain over the nerves, and the whole affection being limited to the distal portions of the extremities, enable one without further difficulty, to exclude rheumatism. By the process of exclusion we have been able to exclude the brain and cord from being the seat of the lesion; and after excluding

rheumatism, we only have left neuritis affecting many nerves, known as multiple neuritis.

The prognosis in the present case would be exceedingly favorable, as it is in the majority of cases of multiple neuritis, when neither the respiration, heart's action, nor the cranial nerves are involved, were it not that the man's habits of alcoholic indulgence should make us fearful of cerebral changes in the course of the disease. The disease is always grave when the intercostal, the phrenic-pneumogastric, hypoglossal or glosso-pharyngeal nerves are involved. Lung, heart, liver, or kidney affection increases the gravity of the prognosis. Psychical symptoms in alcoholic cases are the rule, especially when the disease is severe and denotes more or less brain degeneration. Three weeks subsequently the psychical manifestations so common in alcoholic neuritis developed, and the patient failed mentally and physically, and died Nov. 27, about ten weeks after the beginning of his last illness. The autopsy revealed no apparent changes in the spinal cord. The cord and nerves are hardening for microscopical examination. In the average acute cases the disease progresses up to the end of the fourth or fifth week, remains stationary for two or three weeks, and then gradually regresses, the latter stage lasting three or four months longer. Some cases have a shorter duration, others a very much longer one. The objective sensory disturbances first disappear followed by gradual return of motor power; but complete muscular strength may not be regained for six or twelve months. Sometimes more or less subjective sensory disturbances, especially numbness, and hyperæsthesia, are present long after the objective sensory symptoms have disappeared.

In the way of treatment, absolute rest in bed is of the first importance. The body must be protected from changes of temperature by flannels worn next the skin. These should be changed daily. If the patient is not too helpless, and if the pain and soreness in the limbs are not too great, he should have a daily warm bath at a temperature of 90° to 100°, in which he should be allowed to remain from fifteen to thirty minutes, according to the strength of the pa-

tient; but great care should be taken that the body is not allowed to be chilled and that he is not permitted to make any effort in going to and from the bath. A gentle perspiration may be kept up for several hours by wrapping the patient in a blanket after each bath. Where the pain is great in the legs and arms, hot poultices or fomentations are very grateful and sometimes do good. The bowels should be kept regular. An occasional diaphoretic should be given, and strict attention should be paid to the nourishment of the patient. The diet should be nourishing, easily digested, but not stimulating, during the acute stage. It is absolutely necessary in alcoholic cases to abstain from stimulants throughout the course of the disease. But little in the way of direct medication can be done during the acute stage of the disease. In the rheumatic form of multiple neuritis, however, sodium salicylate is of advantage from the first. After the acute stage is over, strychnine and arsenic are the most reliable agents, and these can be used in connection with iron and quinine if necessary. Electricity and massage should not be used, as a rule, until after the acute stage is over. In cases attended with considerable muscular degeneration, galvanism is to be preferred, applying a continuous or interrupted current, as the objects to be accomplished demand. When muscular wasting is not great, ready response may be gotten to the faradic current, when faradism meets all the requirements. Massage, after muscular pains lessen, is attended with good results. It may be used from the first in subacute cases.

